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Information Science and Technology Center Seminar

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"Scheduling for Small Delays in Multi-channel Wireless Networks"

Thursday, April 8, 2010
10:30 AM - 12:00 PM
TA-3, Bldg. 123, Room 121 (T-DO Conference Room)

Abstract: In this talk, we present recent results in the design and performance evaluation of scheduling algorithms for multi-channel OFDM wireless systems. OFDM wireless systems are of increasing interest, and 4G cellular systems (such as LTE and WiMax) are based on this technology. In this talk, we first introduce the classical MaxWeight algorithm (proposed by Tassiulas and Ephremides) and discuss its throughput-optimality (stability) properties. We then proceed to show that this algorithm can result in poor delay performance in emerging multi-cahhnel OFDM wireless systems. Our main contributions that we present in this talk are a new class of iterative scheduling algorithms for multi-channel wireless networks, where one can achieve both throughput optimality as well as small delay performance. (Based on joint work with Shreeshankar Bodas, Lei Ying and R. Srikant)

Biography: Sanjay Shakkottai received his Ph.D. from the ECE Department at the University of Illinois at Urbana-Champaign in 2002. He is with The University of Texas at Austin, where he is currently an Associate Professor and the Engineering Foundation Centennial Teaching Fellow in the Department of Electrical and Computer Engineering. He received the NSF CAREER award in 2004. His current research interests include network architectures, algorithms and performance analysis for wireless and sensor networks.

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